

# Correlation of Sleep Disturbances, Anxiety and Depression in Croatian War Veterans with Posttraumatic Stress Disorder

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## ABSTRACT

*The aim of the study was to examine the relationships between global sleep quality and its specific components and Posttraumatic Stress Disorder (PTSD) symptom severity questionnaire. We also researched whether sleep quality and sleep disturbances differed among groups of PTSD based on symptom severity categories. This study was conducted on the sample of 120 Croatian war veterans with PTSD. The following self-report instruments were used: Pittsburgh Sleep Quality Index, the Pittsburgh Sleep Quality Index Addendum for PTSD, the Mississippi Scale for Combat-Related PTSD, the Spielberger State and Trait Anxiety Inventory and the Beck Depression Inventory. There were statistically significant differences between the three PTSD severity groups on general nervousness (PSQI-A variable), where patients with extremely severe PTSD have more symptoms of general nervousness than groups with severe or moderate PTSD. Differences were found between PTSD severity groups in episodes of terror and acting-out dreams, where patients with extremely severe PTSD have more symptoms of episodes of terror and acting-out dreams than groups with severe or moderate PTSD. Sleep quality was significantly correlated with state anxiety, trait anxiety, and depression, indicating that with decrease of anxiety and depression, sleep quality improves. Sleep latency was positively correlated with both state and trait anxiety. There wasn't any significant correlation between sleep latency and depression. Study suggests that sleep disturbances are equally severe across groups of veterans based on PTSD severity and that the severity of sleep disturbances is significantly related to severity of anxiety and depression symptoms.*

**Key words:** sleep disturbances, anxiety, depression, croatian war veterans, posttraumatic stress disorder

## Introduction

War situations face individuals with probably the greatest quantity of most disturbing events succeeding one another or even coming together, creating extremely high pressure on all psychological defense models. War-related traumas include stressors of various natures, intensity, and duration, such as witnessing the death or wounding of fellow soldier and/or civilians, being exposed to a sudden artillery and/or military attack, displacement, captivity, rape, and torture. Traumatic events may also be recurrent<sup>1</sup>. Among the most important issues of every war – and the war waged against Croatia is no exception – are the problems and psychological consequences of the war has on the whole population, but particu-

larly on the combatants who were most exposed to physical and psychological traumas.

During the 1991–1995 war in Croatia, more than 1 million people were exposed to direct war stress. More than 13,000 individuals lost their lives, and over 33,000 were wounded. Among the wounded, there were 9,816 civilians. More than 1,000 persons are still missing. In all areas occupied by invaders, the number of civilian casualties surpassed the number of casualties among the police and soldiers. In the course of the war, almost one thousand children have been killed or injured. Thousands of soldiers and civilians from Croatia have been de-

tained in concentration camps in occupied areas of Croatia, but also in Serbia, Montenegro and Bosnia and Herzegovina. The occupied areas of Croatia amounted to almost 15,000 square kilometers, or 26.5% of the state territory. Thus, in those areas there were 549,083 inhabitants or 11.5% of the total population of Croatia<sup>2-5</sup>. Even more people were secondarily or vicariously traumatized. For instance, wives of the Croatian War veterans with PTSD suffered increased psychiatric symptoms, somatic complaints, and loneliness. Symptoms that appear in traumatized children appear in non-traumatized children who play with them, and children of veterans with PTSD exhibit many psychological problems, such as impaired self-esteem, poor reality testing, hyperactivity, aggressive behavior, difficulty coping with their own feelings, especially fear, rage guilt and mistrust<sup>6</sup>. Re-victimization is mainly characterized by a disappointing institutional response from professions that are supposed to provide help. While the war ended in 1995, re-victimization occurred again in the process of being ignored, shunned, resented by the society and sometimes even persecuted for being a victim, together with a lack of social recognition and support after the war<sup>7</sup>.

Consequently, posttraumatic stress disorder (PTSD) presents an important medical and social problem in the Republic of Croatia with prevalence estimates ranging between 10% and 30% depending on the population<sup>4</sup>. Most cases of PTSD related to combat exposure in veterans and exposure trauma in the context of a war in civilian victims during the Croatian War.

Sleep difficulties in PTSD are broadly included in two categories under hypervigilance and re-experiencing symptoms. One of the most common hyperarousal symptoms is insomnia. Heightened arousal characteristic of PTSD interferes with sleep onset, and can make it difficult to fall back to sleep after nocturnal awakenings. Nightmares are included under re-experiencing symptoms, and these recurrent anxiety dreams are considered a hallmark of PTSD<sup>8,9</sup>. In most cases, the nightmare terminates in an awakening followed by difficulty in falling back to sleep. In cases where the nightmares are frequent and chronic, individuals may fear going to sleep because of the possibility of having a nightmare. In addition, nightmares may contribute to insomnia by causing nocturnal awakenings and further increasing arousal. Other sleep disturbances such as nocturnal panic attacks<sup>10,11</sup>, simple and complex motor behaviors and vocalizations have also been reported in PTSD samples<sup>12</sup>.

Nightmares and insomnia are among core symptoms of PTSD and could be extremely distressing for the patient<sup>13,14</sup>. Roszell, McFall & Malas<sup>15</sup> reported that 91% of 116 Vietnam veterans with a current PTSD diagnosis complained of sleep difficulties, the highest prevalence of any PTSD symptom. In Ohayon and Shapiro<sup>16</sup> study, based on a large sample recruited from the community, participants with PTSD had more difficulties initiating sleep (41%) relative to those without PTSD (13%). A previous study suggested that PTSD overrides the well-established influences of gender, age, and psychiatric co-

morbidity on subjective sleep quality, and provided empirical evidence that poor sleep quality and severe sleep disturbances are a clinically significant components of PTSD<sup>12</sup>.

The aim of the study was to examine the relationships between global sleep quality and its specific components as measured by Pittsburgh Sleep Quality Index<sup>17</sup>, Pittsburgh Sleep Quality Index Addendum for PTSD<sup>12</sup> and PTSD symptom severity questionnaire. We also investigated whether sleep quality and sleep disturbances differed among groups of PTSD based on symptom severity categories. Additionally, we examined the relationship between sleep quality, sleep disturbances and symptoms of anxiety and depression in PTSD patients. We set the following two hypotheses: First, PTSD symptom severity as measured by the Mississippi Scale for Combat-Related PTSD (M-PTSD) is associated with the severity of sleep disturbances. Second, we hypothesized that the severity of anxiety and depression symptoms as a part of PTSD symptoms would be negatively correlated with quality of sleep.

## Methods

### *Participants*

One-hundred and twenty male Croatian War veterans who participated in war operations were recruited from Department for Psychological Medicine where they are in multiannual psychiatric treatment for PTSD. They were in psychiatric treatment for at least five years during which they were included in group therapy once a week and were using concurrent SSRI medications. They were using sleeping pills-benzodiazepines (oxazepam, diazepam, lorazepam) in equivalent dose of 10mg diazepam on prn base. Clinical evaluations were carried out on all of the subjects through a complete medical history and clinical interviews by psychiatrists at the Department for Psychological Medicine. The Structured Clinical Interview for DSM-IV<sup>18</sup> was used to assess the presence of PTSD. With consideration of these clinical findings, final diagnoses were made based on the DSM-IV criteria<sup>19</sup>. The participants verified diagnoses by psychologists throughout psychological treatment. Participants were included (based on psychiatric interview) if they met the following criteria: (1) men aged 30–60 years old; (2) posttraumatic stress symptoms; (3) war traumatic experiences; (4) weekly nightmares; (5) insomnia complaints. Of note, all of participants approached to participate in this study reported insomnia and nightmares. Participants with expressed psychotic symptoms or intoxication, who were found to meet criteria for other psychiatric or personality disorders, who had known psychiatric conditions before the war, were excluded. Participants who met criteria for major depression were also excluded.

Research has been conducted in Department for Psychological Medicine individually and in groups<sup>20</sup>. Participants were introduced to the aim of this study and they were told that obtained data would be used only for sci-

entific purposes. Written, informed consent was obtained from all participants. The organization's Institutional Review Board approved the study and all participants were treated in accordance with institutional ethics guidelines.

### Measures

For the study purposes, the following self-report instruments were used: Pittsburgh Sleep Quality Index<sup>17</sup>, the Pittsburgh Sleep Quality Index Addendum for PTSD<sup>12</sup>, the Mississippi Scale for Combat-Related PTSD<sup>21</sup>, the Spielberger State and Trait Anxiety Inventory<sup>22</sup>, and the Beck Depression Inventory<sup>23</sup>.

The PSQI is a 19-item self-report questionnaire designed to measure sleep quality and disturbances over a 1-month period. The 19 primary items yield a global sleep quality score, ranging from 0 (no difficulties) to 21 (severe sleep difficulties). The PSQI global score has good internal constancy (Cronbach's  $[\alpha]=.83$ ) and equally good test-retest reliability ( $r=.85$ ). The 7 component scores (subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleep medications, and daytime dysfunction) have more moderate internal consistency. Cronbach's  $[\alpha]$  ranges from .76, considered good for subjective sleep quality and habitual sleep efficiency, to a rather poor internal reliability ( $[\alpha]=.35$ ) for sleep disturbances. Test-retest reliability for most of the component scores was acceptable, ranging from Pearson's  $r=.84$  for sleep latency to  $r=.65$  for medication use. All of the component scores showed significant correlations with the global PSQI score.

The PSQI Addendum for PTSD (PSQI-A) consists of seven items that focus on the frequency of seven disruptive nocturnal behaviors reported by PTSD patients. These seven items include frequency of hot flashes; general nervousness; memories or nightmares of traumatic experience; severe anxiety or panic not related to traumatic memories; bad dreams not related to traumatic memories; episodes of terror or screaming during sleep without fully awakening; and episodes or acting out dreams, such as kicking, punching, running, or screaming. The PSQI-A has satisfactory internal consistency ( $\alpha=0.85$ ) and good convergent validity with standard PTSD measures even when excluding their sleep-related items. A global PSQI score of 4 yielded a sensitivity of 94%, a specificity of 82%, and a positive predictive value of 93% for discriminating participants with PTSD from those without PTSD.

The Mississippi Scale for Combat-Related PTSD<sup>21</sup>, measures self-reported symptoms of posttraumatic stress in veteran populations. The M-PTSD is a 39-item Likert type questionnaire (1 to 5). Results can range from 39 to 195, where higher score indicates difficulties in PTSD symptoms increase. If the result is between 107 and 135, it is presumed that examinee has satisfied PTSD criteria, but his difficulties are of moderate intensity; if the result is between 136 and 165, PTSD difficulties are of severe intensity; and if the result is between 166 and 195 then

difficulties are of extremely severe intensity. Obtained PTSD severity classifications were completed by clinical psychologists with years-long experience in working with PTSD diagnosed patients.

The Beck Depression Inventory<sup>23</sup>, is a 21-item self-report questionnaire to assess the severity of depressive symptoms. The Questionnaire is sensitive to changes in intensity of symptoms after psychotherapy or pharmacotherapy, and has an internal consistency coefficient of 0.80.

The Spielberger State and Trait Anxiety Inventory<sup>22</sup> was used to assess symptoms of anxiety. STAI questionnaire consists of two parts: one is used for examining state, other for examining character trait, and each has 20 items. This questionnaire has good metrical characteristics. For the Trait-anxiety scale the reliability coefficients ranged from .65 to .86, whereas the range for the State-anxiety scale was .16 to .62. Validity correlations are .80, .75, and .52, respectively.

### Statistics

Scores on the seven PSQI subscales (sleep quality, sleep latency, sleep duration, sleep efficiency, sleep disturbances, use of medication, daytime dysfunction) were not normally distributed and, accordingly, Kruskal-Wallis to examine if there is a difference between groups of based on severity levels (moderate, severe, and extremely severe PTSD) on the PSQI variables. Items scores on the PSQI-A were normally distributed. Therefore, ANOVA were used to assess differences on individual PSQI-A items (i.e., (hot flashes, general nervousness, memories/nightmares of trauma, anxiety/panic not related to trauma, bad dreams not related to trauma, episodes of terror, acting out dreams) among groups of veterans based on PTSD severity. Correlations between state anxiety, trait anxiety, depression, and PSQI total and component scores we examined with Pearson's  $r$ , as well as correlations between state anxiety, trait anxiety, depression and PSQI-A total and item scores.

### Results

Data were collected from 120 men, all Croatian War veterans with combat experience for at least three years in which period they were exposed to a number of stressful situations (combat, combat injuries, witnessing fellow-fighters dying). The age range of participants in this study was 35 to 57 years old, and the mean age was 45 years old ( $SD=3.68$  years). This study didn't find significant correlation between participants' age and variables under consideration in PSQI and PSQI-A questionnaires (correlations vary 0.022–0.1270).

Table 1 presents mean scores of the study sample on self-report measures. All scales were well above reported clinical cut-off scores of clinical meaningfulness. Data derived from the PSQI for the entire sample indicated that 70% ( $N=84$ ) of participants reported that their sleep duration was less than 5 hours *per* night, and 93.3 %

**TABLE 1**  
VALUES OF DESCRIPTIVE STATISTIC FOR PTSD MEASURES,  
ANXIETY AND DEPRESSION

Measurements	M±SD
Pittsburgh sleep quality index (PSQI)	15.47±2.86
PSQI Addendum for PTSD (PSQI-A)	11.98±0.98
M-PTSD	138.1±23.10
Anxiety as a state (STAI-S)	59.88±11.40
Anxiety as a trait (STAI-T)	56.35±12.37
Depression (BDI)	27.53±11.12

(N=112) of participants reported various disturbances during sleep such as awakening because of nightmares, muscle twitches, muscle contractions, at least twice a week. As many as 53.3% (N=64) of participants reported sleep latency greater than 3 hours *per* night, and a majority (60%; N=72) endorsed very bad sleep quality. Of note, 66.7% (N=80) of participants also reported taking sleeping medications »very often« (i.e., 3 or more times / week in the past month), and yet, continued to experience significant sleep disturbances.

The mean PSQI-A score for the entire sample was 11.98 (SD=0.98). On the PSQI-A, 39.3% of participants had hot flashes once to twice a week, and 33% had hot flashes three times a week or more. 43.2% of participants had general nervousness once to twice a week, and 30% had general nervousness three times a week or more. 32.4% had nightmares of traumatic experience once-twice a week and 22% of participants had nightmares of traumatic experience three times a week or more. 57.3% of participants had anxiety or panic attacks three times a week or more, and 39.2% had it once-twice a week. 25.5% of participants had nightmares not related to trauma once-twice a week, and 22.7% had it three times a week or more. 43% of participants had episodes of terror once-twice a week, and 29.6% had it three times a week or more.

**TABLE 2**  
DIFFERENCES IN SLEEP MEASURES BETWEEN PARTICIPANTS  
DUE TO LEVEL OF EXPRESSED PTSD DIFFICULTIES  
(MODERATE PTSD, SEVERE PTSD, AND EXTREME PTSD)

Variable	Mann Whitney U Group 1, 2	Mann Whitney U Group 1, 3
PSQI global	66.000 (p=0.239)	14.000 (p=0.521)
Sleep quality	9.000 (p=0.189)	69.500 (p=0.237)
Sleep latency	15.000 (p=0.611)	82.500 (p=0.656)
Sleep duration	15.000 (p=0.611)	78.000 (p=0.611)
Sleep efficiency	9.000 (p=0.189)	86.000 (p=0.794)
Sleep disturbances	13.000 (p=0.439)	84.500 (p=0.359)
Use of medication	13.500 (p=0.439)	78.500 (p=0.481)
Daytime dysfunction	13.500 (p=0.439)	73.500 (p=0.329)

Group 1 = moderate PTSD (M-PTSD score = 107–135)

Group 2 = severe PTSD (M-PTSD = 136–165)

Group 3 = extremely severe PTSD (M-PTSD = 166–195)

47% of participants had acting out of dreams once-twice a week, and 25.4% had it three times a week or more.

The mean M-PTSD score for the entire sample was 138.1, SD=23.10. We distinguished three groups of participants considering intensity based on M-PTSD scores: Group 1 (n=30) = moderate PTSD (M-PTSD score= 107–135), Group 2 (n=45) = severe PTSD (M-PTSD= 136–165), Group 3 (n=45) = extremely severe PTSD (M-PTSD=166–195). As shown in Table 2, there was no significant difference in the total PSQI score, or subscale scores across these three groups. Considering the fact that questionnaires we used (BDI and M-PTSD) consist of items related to sleep we thought that it is necessary to determine possible connection of depression measures and PTSD with PSQI and PSQI-A measures by controlling sleep items in these questionnaires (these items could have obscured the real connection) (Table 2, Table 3). As noted in mentioned tables, control of the sleep

**TABLE 3**  
MEAN ITEM SCORES FOR THE PSQI ADDENDUM (PSQI-A) FOR PTSD BETWEEN GROUPS (MODERATE, SEVERE, AND EXTREMELY SEVERE PTSD)

Variable	Group 1 (N=30)		Group 2 (N=45)		Group 3 (N=45)		F	p
	M	SD	M	SD	M	SD		
Hot flashes	1.85	1.068	1.79	1.051	2	1.732	0.406	0.756
General nervousness	1.62	0.768	1.57	1.158	2.33	2.977	3.043*	0.047
Memories/nightmares of trauma	1.38	0.870	1.14	1.099	1.33	0.577	0.369	0.776
Anxiety/panic not related to trauma	2.54	0.660	2.07	0.829	2.67	0.563	0.180	0.836
Bad dreams not related to trauma	1.38	1.044	1.14	0.663	1.33	0.589	0.587	0.334
Episodes of terror	1.08	0.760	1.21	0.669	2.97	1.105	4.044*	0.017
Acting out dreams	0.77	0.599	0.79	0.851	2.97	1.053	5.512*	0.000

p < .05

Group 1 = moderate PTSD (M-PTSD score = 107–135)

Group 2 = severe PTSD (M-PTSD = 136–165)

Group 3 = extremely severe PTSD (M-PTSD = 166–195)

items in BDI and M-PTSD hasn't show significant breakthrough regarding to variables under consideration in relation to results where they were not controlled.

As shown in Table 3, there were statistically significant differences between the three PTSD severity groups in general nervousness (PSQI-A variable), where patients with extremely severe PTSD have more symptoms of general nervousness than ones with severe or moderate PTSD. Differences were found between PTSD severity groups for episodes of terror and acting-out dreams, where patients with extremely severe PTSD have more symptoms of episodes of terror and acting-out dreams than ones with severe or moderate PTSD. When sleep items in M-PTSD are excluded, results are the same (Table 3).

Pearson's *r* correlations coefficients were computed to assess the relationships between sleep quality, overall severity of PTSD, anxiety, and depression. Results are presented in Table 4. Sleep quality was significantly correlated with state anxiety, trait anxiety, and depression, indicating that with decrease of anxiety and depression, sleep quality improves. Sleep latency was positively correlated with both state and trait anxiety. There was no significant correlation between sleep latency and depression. Other PSQI component scores (sleep duration, sleep disturbances, use of medication and daytime dysfunction) were not significantly correlated with depression, state or trait anxiety. Furthermore, when we excluded sleep item from BDI, we found statistically significant correlation only between depression and sleep quality, same as in a case when this item was included in total valuation of BDI (Table 4). There was a statistically significant correlation between variables of PSQI-A – episodes of terror and trait anxiety. No other significant correlation was found between other PSQI-A item scores, anxiety, and depression. There was also no significant correlation found between depression measured with BDI when sleep item was excluded and PSQI-A questionnaire (Table 5).

No significant correlation was found between participants' age and PSQI and PSQI-A questionnaire measures.

## Discussion

The aim of the study was to investigate the nature, frequency, severity, and correlates of sleep disturbances on a sample of 120 Croatian War veterans with chronic PTSD (duration 7–10 years). Consistent with previous studies, participants endorsed frequent and severe sleep disturbances, as indicated by high scores on the PSQI and PSQI-A. Majority of participants reported very long sleep latencies, poor overall sleep quality, short sleep duration, poor sleep efficiency, and various sleep disturbances, as well as frequent use of sleep aids.

Findings show that sleep disturbances as measured by the PSQI and PSQI-A exceed clinical thresholds in this population. This observation is consistent with previous reports<sup>12,24,25</sup>. However, sleep quality was not sig-

nificantly worsened among groups of veterans with more severe PTSD symptoms. Results suggest that sleep disturbances are important symptoms of PTSD and that with war veterans with chronic PTSD, clinically significant sleep disturbances are a stable feature.

This study did not find differences in sleep quality and its component across groups of veterans based PTSD severity. However, differences were found for some items of the PSQI-A measures across these subgroups of participants. Specifically, general nervousness, episodes of terror, and acting-out dreams were more severe in patients with extremely severe PTSD compared to the groups with severe or moderate PTSD.

Community studies examining PTSD have demonstrated high rates of comorbid anxiety and depressive disorders, as well as substance dependence<sup>26,27</sup>. Sleep disturbances have been identified as an important clinical construct and reflect a core dysfunction underlying post-traumatic stress disorder and one important commonality among these psychiatric conditions. Anxiety and depression are commonly associated with the above symptoms and signs<sup>28</sup>, and may be characterized by poor overall sleep quality and sleep disturbances<sup>16,29,30</sup>. Due to those facts, we included patients with no comorbidity with PTSD.

The present results provide partial support for the close relationships between sleep disturbances, anxiety, and depressive symptoms. In this sample, anxiety and PTSD symptom severity was more closely correlated with overall sleep quality and sleep latency, whereas depression was related to sleep quality only. The former observations are consistent with previous studies<sup>31,32</sup>, but the latter differ from previous studies that have typically found a strong relationship between sleep complaints and depression<sup>16,29,33,34</sup>. In our study participants with extremely severe PTSD had highly expressed general nervousness, episodes of terrors and acting out dreams (kicking, punching, running) compared to participants with moderate and severe PTSD. However, there were no significant correlations between PSQI-A variables and depression, state or trait anxiety. The only significant correlation was found between anxiety as a trait and PSQI-A measures in episodes of terror. This finding raises the possibility that trait anxiety confers a vulnerability to experiences sleep terrors, and possibly, more profound sleep-wake dysregulation in participants with chronic PTSD, which may require distinct treatment strategies.

The present findings can be interpreted in the context of hyperarousal that underlie both PTSD and sleep disturbances. Several studies have suggested that sleep disturbances in PTSD, are manifestations of hyperarousal, the group of symptoms described in Cluster D of the PTSD diagnostic criteria. Mellman<sup>36</sup> concluded that sleep in chronic PTSD could be disrupted by intrusions of more highly aroused states and behaviors.

Clinical and laboratory findings have provided support for the hypothesis of heightened arousal during sleep in PTSD<sup>36–38</sup>. For instance, van der Kolk, Greenberg,

Boyd & Krystal<sup>39</sup> suggested that abnormal noradrenergic CNS function underlie chronic PTSD. In a related manner, noradrenergic agents have been shown to have direct effects on arousal in trauma exposed and PTSD subjects<sup>40–43</sup>.

While sleep disturbance in PTSD has sometimes been referred to as the hallmark symptom<sup>9</sup>, it has been more common for sleep symptoms to be viewed as secondary symptoms that remit with the successful treatment of PTSD. Fragmented sleep caused by frequent nightmares, re-experiencing the trauma, is the primary sleep disturbance in such patients. The frequency of nightmares has a strong relationship to the level of exposure to the traumatic event<sup>44</sup>. Levin<sup>45</sup> found that young adults without PTSD having at least one nightmare *per week* had significant greater trait anxiety and there were trends for higher state anxiety and depression.

Limitation of this study is in a relatively small number of participants where all of them were receiving concurrent treatment in a day hospital program in our clinic for sleep disturbances. Participants were included in a study based on history data of sleep disturbance, and where exposure to traumatic events was not corroborated with military records. Additionally, depression and PTSD questionnaires used in the present study include sleep items. This overall may have partially masked the

relationships between daytime symptoms of PTSD, depression, and sleep. Future studies should include the use of objective sleep measurements, and external corroboration of trauma exposure. Finally, it is possible that participants overestimated the severity of symptoms on self-report measures used in the present study. This in turn, may have limited variability in response and our ability to detect significant correlations among the symptom domains of interest.

Despite these limitations, this study clearly demonstrates the clinical significance of sleep disturbances in Croatian War veterans with chronic PTSD, and the need to develop effective intervention strategies specifically targeting sleep disturbances in order to establish clinical guidelines for the treatment of daytime and nighttime PTSD symptoms. The present findings also highlight the need for further understanding the psychophysiological mechanisms that sub-serve sleep disturbances in PTSD and their relationship to depression, and state and trait anxiety.

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## **POVEZANOST POREMEĆAJA SPAVANJA, ANKSIOZNOSTI I DEPRESIJE KOD HRVATSKIH RATNIH VETERANA SA POSTTRAUMATSKIM STRESNIM POREMEĆAJEM**

### **S A Ž E T A K**

Cilj rada bio je ispitati odnos između kvalitete spavanja i njenih specifičnih komponenti i inteziteta simptoma post-traumatskog stresnog poremećaja (PTSP). Ispitano je da li se kvaliteta spavanja i poremećaji spavanja razlikuju među podskupinama bolesnika sa PTSP-om. Studija je provedena na 120 hrvatskih ratnih veterana sa simptomima PTSP. Korištene su slijedeći samoocjenski instrumenti: Pittsburgh Sleep Quality Index, the Pittsburgh Sleep Quality Index Addendum for PTSD, the Mississippi Scale for Combat-Related PTSD, the Spielberger State and Trait Anxiety Inventory and the Beck Depression Inventory. Statistički značajna razlika zabilježena je između tri skupine ispitanika s PTSP-om, pri čemu je skupina ispitanika sa jako teškim PTSP-om imala izraženije simptome pojačane pobudenosti u odnosu na ostale dvije grupe ispitanika. Razlika je nađena i među epizodama košmarnih snova, gdje su ispitanici sa jako intenzivnim PTSP-om imali više epizoda košmarnih snova u odnosu na preostale dvije skupine. Kvaliteta sna bila je u korelaciji s anksioznošću i depresijom ispitanika, a smanjenje simptoma anksioznosti i depresije dovelo je do poboljšanja sna. Latencija spavanja je u pozitivnoj korelaciji s tzv. »state« i »trait« anksioznosti. Između latencije spavanja i depresije nije nađena korelacija. Poremećaj spavanja je jednako izražen u sve tri skupine ispitanika, a težina poremećaja spavanja je značajno povezana s težinom anksioznosti i depresije.